

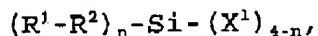
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PATENT APPLN. NO. 10/552,663
RESPONSE UNDER 37 C.F.R. §1.111

PATENT
NON-FINAL

IN THE CLAIMS:

1. (currently amended) A low dielectric constant polymer, comprising monomeric units derived from a compound having the general formula I



I

wherein

each X^1 is independently selected from hydrogen and inorganic leaving groups,

R^2 is an optional group and comprises an alkylene having 1 to 6 carbon atoms or an arylene,

R^1 is a polycycloalkyl group adamantyl or diadamantyl substituted with 1 to 3 alkyl substituents, which optionally carry 1 to 6 halogen substituents, and

n is an integer 1 to 3.

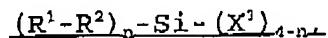
2. (currently amended) The polymer according to claim 1, wherein the organic content of the polymer is in the range of 30 to 70 wt.-%, ~~preferably higher than 48 wt-%.~~

3 - 6. (canceled)

7. (previously presented) The polymer according to claim 1,
wherein the inorganic leaving group is selected from halogens.

8. (previously presented) The polymer according to claim 1,
obtainable by homopolymerization of compounds of the formula I.

9. (currently amended) ~~The polymer according to claim 1 A low dielectric constant polymer, comprising monomeric units derived from a compound having the general formula I~~



I

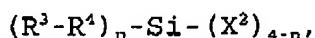
wherein

each X¹ is independently selected from hydrogen and inorganic leaving groups,

R² is an optional group and comprises an alkylene having 1 to 6 carbon atoms or an arylene,

R¹ is a polycycloalkyl group, and

n is an integer 1 to 3, which is obtainable by copolymerization of a compound of formula I with a compound of formula II



II

wherein

X² is hydrogen or a hydrolysable group selected from halogen, acyloxy, alkoxy and OH groups,

R⁴ is an optional group and comprises an alkylene having 1 to 6 carbon atoms or an arylene and

R³ is an alkyl having 1 to 16 carbon atoms, a vinyl having from 2 to 16 carbon atoms, a cycloalkyl having from 3 to 16 carbon atoms, an aryl having from 5 to 18 carbon atoms or a polycyclic alkyl group having from 7 to 16 carbon atoms, and n is an integer 1-3.

10. (original) The polymer according to claim 9, wherein R³ is selected from alkyl groups having 1 to 6 carbon atoms, vinyl groups having from 2 to 6 carbon atoms, and aryl groups having 6 carbon atoms.

11. (previously presented) The polymer according to claim 9, wherein the molar ratio between monomeric units derived from compounds according to formula I and of formula II is in the range of 25:75 to 75:25.

12. (previously presented) The polymer according to claim 9, wherein R¹ or R³, respectively, is directly bonded to the silicon atom.

13. (previously presented) The polymer according to claim 9, wherein R¹ or R³, respectively, is bonded to the silicon atom via an alkylene chain selected from methylene, ethylene and propylene, or an arylene group selected from phenylene.

14. (currently amended) The polymer according to claim 1, wherein the total sum dielectric components at 1 MHz is 2.50 or less, ~~preferably 2.1 or less.~~

15. (original) The polymer according to claim 14, wherein the orientational dielectric constant of the polymer is 0.4 or less.

16. (previously presented) The polymer according to claim 1, wherein the oxygen content of the polymer is less than 15 atomic %.

17. (previously presented) The polymer according to claim 9, wherein the carbon content of the polymer is more than 25 atomic %.

18. (currently amended) The polymer according to claim 1, wherein the dielectric constant of the dielectric material after curing is 2.50 or less, ~~preferably 2.30 or less.~~

19. (currently amended) The polymer according to claim 1, wherein the porosity of the dielectric material is less than 20 %, ~~preferably less than 15 %.~~

20. (original) The polymer according to claim 1, wherein the average pore radius is less than 1 nm.

21. (currently amended) The polymer according to claim 1, wherein the Young's modulus of the film is higher than 4 GPa after curing, ~~in particular higher than 6 GPa.~~

22 - 53. (canceled)

54. (new) The polymer according to claim 2, wherein the organic content of the polymer is greater than 48 wt-%.

55. (new) The polymer according the claim 14, wherein the total sum dielectric components at 1 MHz is 2.10 or less.

56. (new) The polymer according to claim 18, wherein the dielectric constant of the dielectric material after curing is 2.30 or less.

57. (new) The polymer according to claim 19, wherein the porosity of the dielectric material is less than 15 %.

58. (new) The polymer according to claim 21, wherein the Young's modulus of the film is higher than 6 GPa after curing.